Installation guide

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DPU-2 MK2 data processing unit

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#renishaw

Compliance information for this product is available by scanning the QR code or visiting **www.renishaw.com/mtpdoc**.

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Contents

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Before you begin

Warranty

Unless you and Renishaw have agreed and signed a separate written agreement, the equipment and/or software are sold subject to the Renishaw Standard Terms and Conditions supplied with such equipment and/or software, or available on request from your local Renishaw office.

Renishaw warrants its equipment and software for a limited period (as set out in the Standard Terms and Conditions), provided that they are installed and used exactly as defined in associated Renishaw documentation. You should consult these Standard Terms and Conditions to find out the full details of your warranty.

Equipment and/or software purchased by you from a third-party supplier is subject to separate terms and conditions supplied with such equipment and/or software. You should contact your third-party supplier for details.

CNC machines

CNC machine tools must always be operated by fully-trained personnel in accordance with the manufacturer's instructions.

Care of the unit

Keep system components clean.

Patents

None applicable.

DPU-2 MK2 software notices

This DPU-2 MK2 product includes embedded software (firmware) to which the following notices apply:

US government notice

NOTICE TO UNITED STATES GOVERNMENT CONTRACT AND PRIME CONTRACT CUSTOMERS

This software is commercial computer software that has been developed by Renishaw exclusively at private expense. Notwithstanding any other lease or licence agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the United States Government and/or its prime contractors regarding its use, reproduction and disclosure are as set forth in the terms of the contract or subcontract between Renishaw and the United States Government, civilian federal agency or prime contractor respectively. Please consult the applicable contract or subcontract and the software licence incorporated therein, if applicable, to determine your exact rights regarding use, reproduction and/or disclosure.

Renishaw software EULA

Renishaw software is licensed in accordance with the Renishaw licence at:
www.renishaw.com/legal/softwareterms

Intended use

The DPU-2 MK2 data processing unit must only be used as intended. The DPU-2 MK2 hosts Renishaw Productivity+™ software that is used with Renishaw touch-trigger and scanning probes, and analyses data returned from the associated probing cycles.

Safety

DPU-2 MK2 data processing unit

The 24 Vdc supply to this equipment must be derived from a source which is compliant with current local electrical safety requirements and is approved to BS EN IEC 62368-1, BS EN IEC 61010-1 or suitable equivalent.

WARNING: Ensure the machine tool is in a safe state and power is removed from the DPU-2 MK2 when making any wiring connections or changes.

Information to the user

This product is supplied with a non-rechargeable lithium-metal coin cell battery. Refer to the battery manufacturer's literature for specific battery operating, safety and disposal guidelines.

- Do not attempt to recharge the batteries.
- Replace the batteries only with the specified type.
- Do not mix new and used batteries in the product.
- Do not mix different types or brands of batteries in the product.
- Ensure that all batteries are inserted with the correct polarity in accordance with the instructions in this manual and indicated on the product.
- Do not store the batteries in direct sunlight.
- Do not expose the batteries to water.
- Do not expose the batteries to heat or dispose of the batteries in a fire.
- Avoid forced discharge of the batteries.
- Do not short circuit the batteries.
- Do not disassemble, apply excessive pressure, pierce, deform or subject the batteries to impact.
- Do not swallow the batteries.
- Keep the batteries out of the reach of children.
- If the batteries are swollen or damaged do not use them in the product and exercise caution when handling them.
- Dispose of waste batteries in accordance with your local environmental and safety laws.

Ensure that you comply with international and national battery transport regulations when transporting the batteries or this product with the batteries inserted.

WARNING: Eye protection must be worn in all applications involving the use of machine tools.

Refer to the machine supplier's operating instructions.

The DPU-2 MK2 unit must be installed by a competent person, observing relevant safety precautions. Before starting work, ensure that the machine tool is in a safe condition with the power switched off.

WARNING: Ensure that the electrical supply is isolated and locked off, and that all sources of electrical energy have dissipated before commencing work in the electrical cabinet.

Information to the machine supplier/installer

It is the machine supplier's responsibility to ensure that the user is made aware of any hazards involved in operation, including those mentioned in Renishaw product literature, and to ensure that adequate guards and safety interlocks are provided.

The DPU-2 MK2 is used in conjunction with Renishaw touch-trigger and scanning probes, associated interface and receiver. If any of the products in this system fails, the system may falsely indicate a probe seated condition. Do not rely on signals from the DPU-2 MK2, Renishaw probes, or the associated interface and receiver to halt the movement of the machine.

Information to the equipment installer

All Renishaw equipment is designed to comply with the relevant UK, EU and FCC regulatory requirements. It is the responsibility of the equipment installer to ensure that the following guidelines are adhered to, in order for the product to function in accordance with these regulations:

- any interface MUST be installed in a position away from any potential sources of electrical noise (for example, power transformers, servo drives);
- all 0 V/ground connections should be connected to the machine "star point" (the "star point" is a single point return for all equipment ground and screen cables). This is very important and failure to adhere to this can cause a potential difference between grounds;
- all screens must be connected as outlined in the user instructions;
- cables must not be routed alongside high current sources (for example, motor power supply cables), or be near high-speed data lines;
- cable lengths should always be kept to a minimum.

Equipment operation

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

DPU-2 MK2 basics

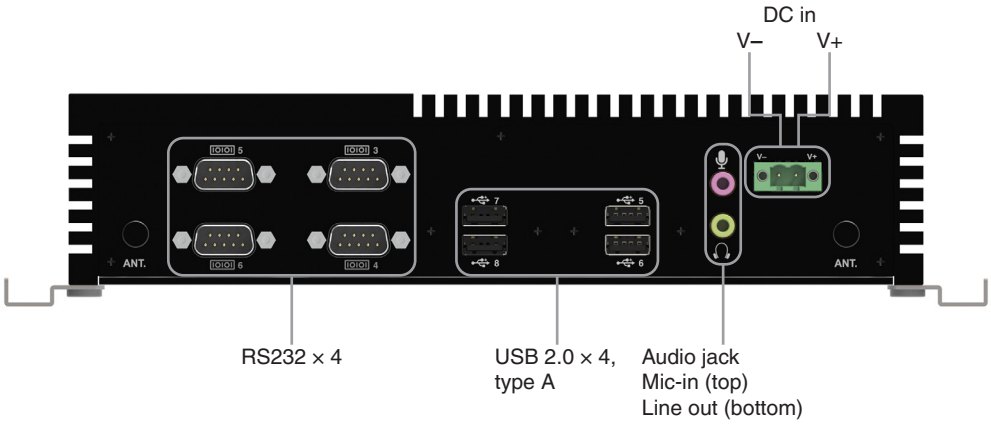
DPU-2 MK2 data processing unit

The DPU-2 MK2 is used in conjunction with Renishaw touch-trigger and scanning probes, OSI-S interface and OMM-S receiver. The DPU-2 MK2 hosts Renishaw Productivity+™ software, and analyses data returned from the associated probing software cycles.

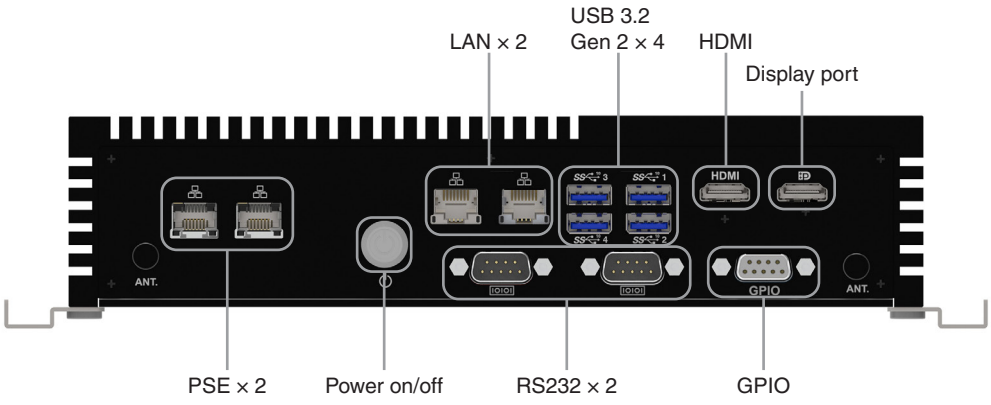
Installed within the CNC machine tool controller cabinet, and located away from sources of interference such as transformers and motor controllers, the DPU-2 MK2 can draw its power from the machine's 12 Vdc to 24 Vdc supply.

DPU-2 MK2 connectors

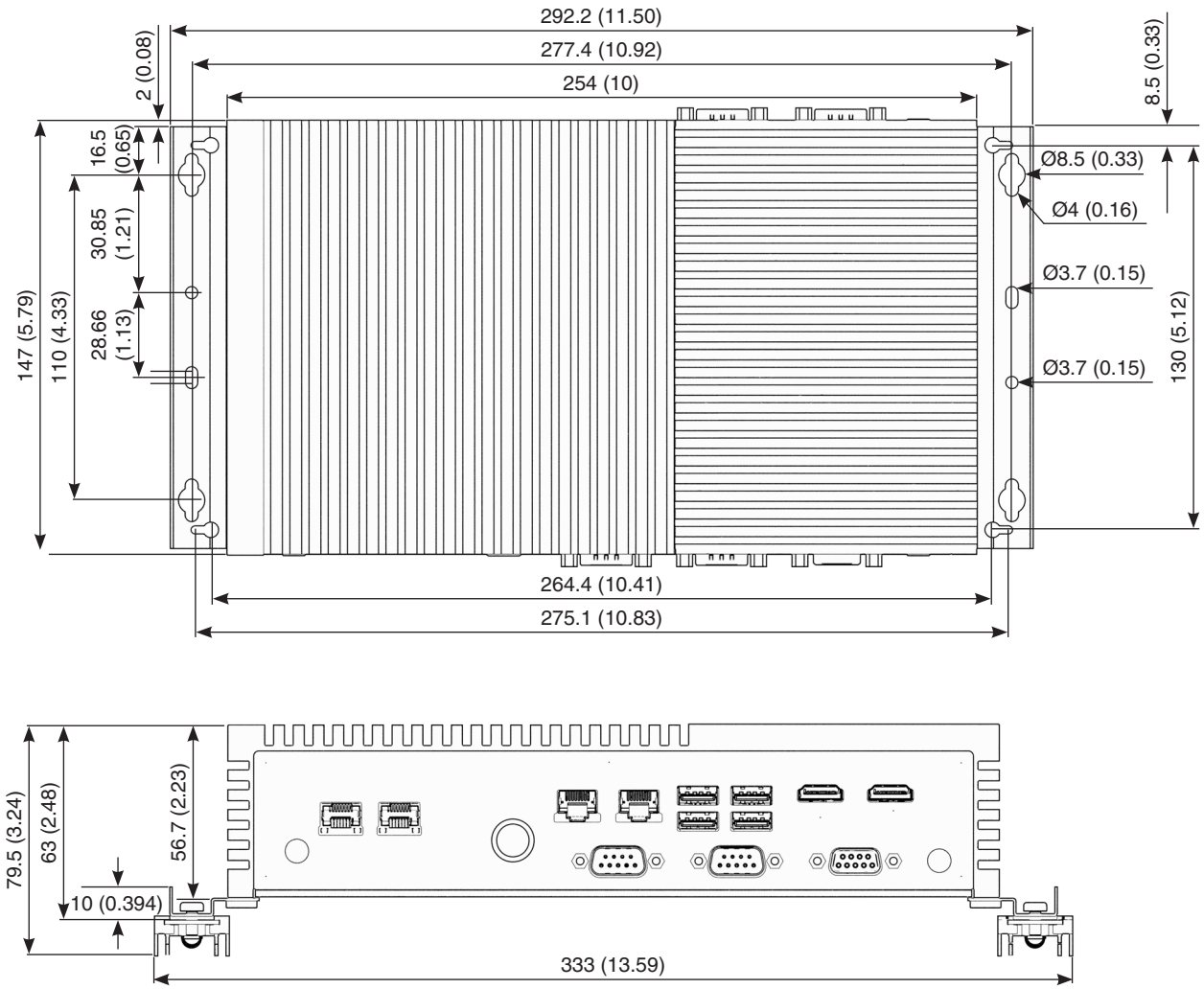
Front face



Rear face



Dimensions



Dimensions given in mm (in)

Power supply

The DPU-2 MK2 draws its power from the CNC machine's 12 Vdc to 24 Vdc supply.

DPU-2 MK2 specification

Principal application	Data processing unit that hosts programming and data analysis software for use with Renishaw probing systems.	
Compatible software applications	Productivity+™ CNC plug-in; Productivity+™ Scanning Toolkits (see *Productivity+™ Scanning Suite* data sheet (Renishaw part no. H-4007-8205) for applicable software part numbers)	
Dimensions (excluding mounting brackets and DIN rail clips)	Width Height Depth	254 mm (10 in) 57 mm (2.24 in) 147 mm (5.79 in)
Weight	2450 g (89.60 oz)	
Battery type [1]	1 × CR2032 3 V lithium-manganese dioxide (Li-Mn02)	
Supply voltage	12 Vdc to 24 Vdc (powered from CNC machine tool)	
Power consumption	65 W (maximum)	
Power connection	2-pin Phoenix connector	
Power on	Auto on	
System storage	8 GB RAM, 256 GB solid-state drive	
USB connection	4 × USB 3.2 4 × USB 2.0	
Ethernet connection	2 × LAN ports 2 × PSE ports	
Display connection	1 × HDMI 1 × display port	
Communications connection	4 × RS232 2 × RS232/422/485	
Audio connection	1 × Mic-in 1 × Line-out	
General purpose connection	1 × GPIO	
Mounting	DIN rail mount	
Environment	Operating temperature	–20 °C to +60 °C (–4 °F to +140 °F) BS EN 60068-2-30:2005
	Humidity	5% to 95% (non-condensing)
	Cooling	Fanless

[1] The DPU-2 MK2 uses one CR2032 3 V lithium-manganese dioxide (Li-Mn02) coin cell CMOS battery to retain time and date information and configuration settings. The battery is enclosed in a shroud, has soldered wires and is fitted with a 2-pin Molex connector.

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Installation

DPU-2 MK2 assembly

DPU-2 MK2 product packaging contains the DPU-2 MK2 unit, and two mounting bracket / DIN rail clip assemblies.

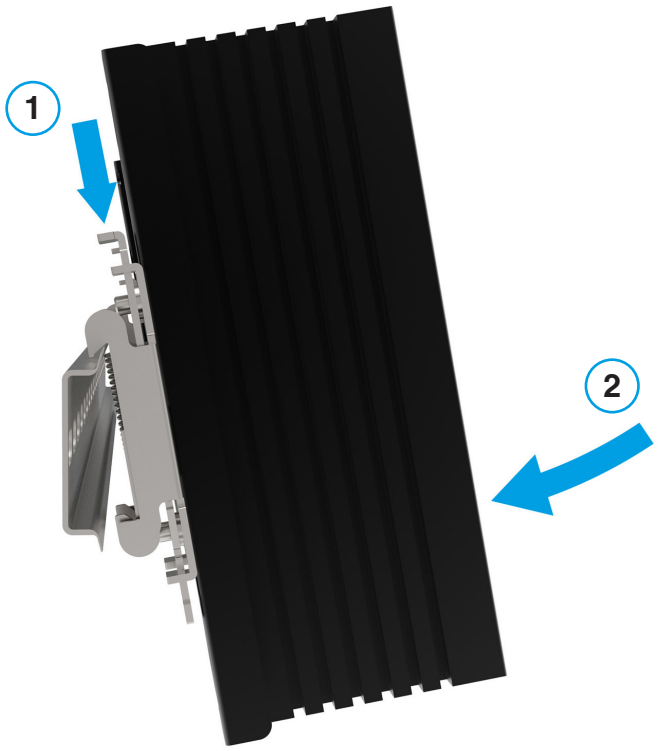
DPU-2 MK2 installation

WARNING: Before installing the DPU-2 MK2, ensure that the machine is safe to work on. Switch off machine power when working in the controller cabinet.

The DPU-2 MK2 must be installed in the CNC machine tool controller cabinet. Position the unit away from potential sources of interference, such as transformers and motor controllers.

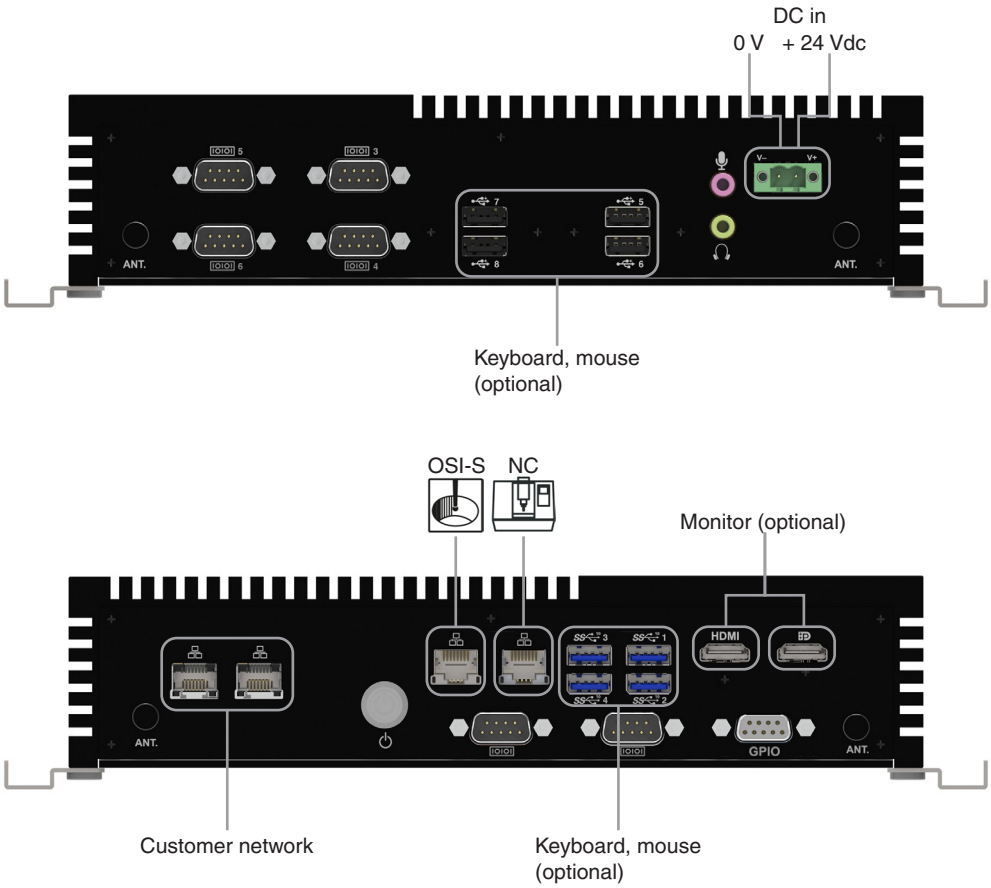
DPU-2 MK2 mounting

The DPU-2 MK2 should be DIN rail mounted in the CNC machine controller cabinet.



The unit should be mounted such that clearance of 50 mm (1.97 in) is available on all sides.

Connecting the DPU-2 MK2



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Maintenance

No routine maintenance is required.

Remove dust from the external surfaces with a dry cloth.

Further dismantling and repair of Renishaw equipment is a highly specialised operation, which must be carried out at an authorised Renishaw Service Centre.

Equipment requiring repair, overhaul or attention under warranty should be returned to your supplier.

Changing the CMOS battery

WARNING: Before removing the DPU-2 MK2, ensure that the machine is safe to work on. Switch off machine power when working in the controller cabinet.

CAUTIONS:

Do not leave dead batteries in the unit.

When changing batteries, do not allow debris to enter the unit.

When changing batteries, check that the battery polarity is correct.

Only use specified batteries.

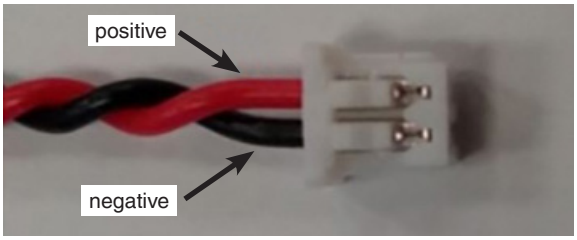
Battery type

One off CR2032 3 V lithium-manganese dioxide (Li-Mn02).

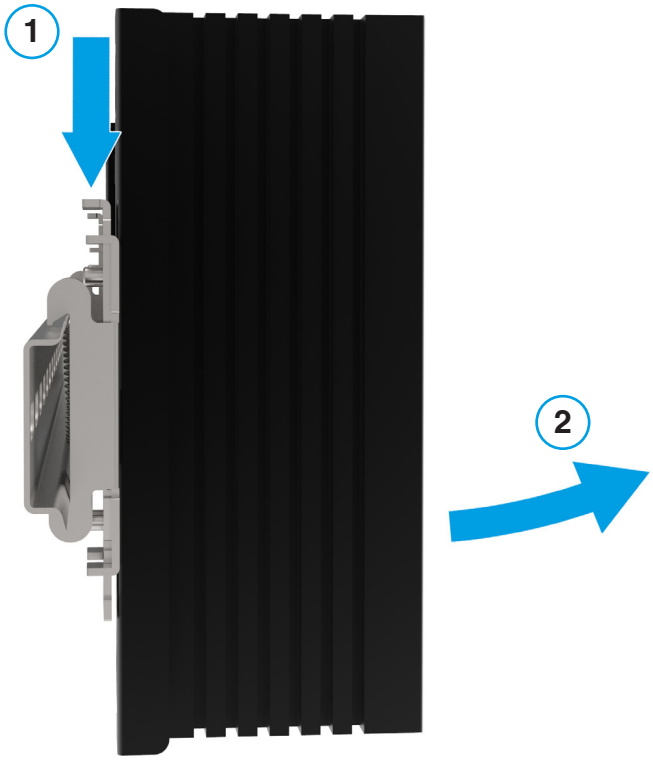
The battery is enclosed in a shroud, has soldered wires and is fitted with a 2-pin Molex connector.

Due to international and national battery transport regulations, we recommend that a replacement battery is sourced locally.

IMPORTANT: Care must be taken to make sure the cable wiring is correct, as shown in the image below.



CAUTION: Dispose of dead batteries in accordance with local regulations. Never dispose of batteries in a fire.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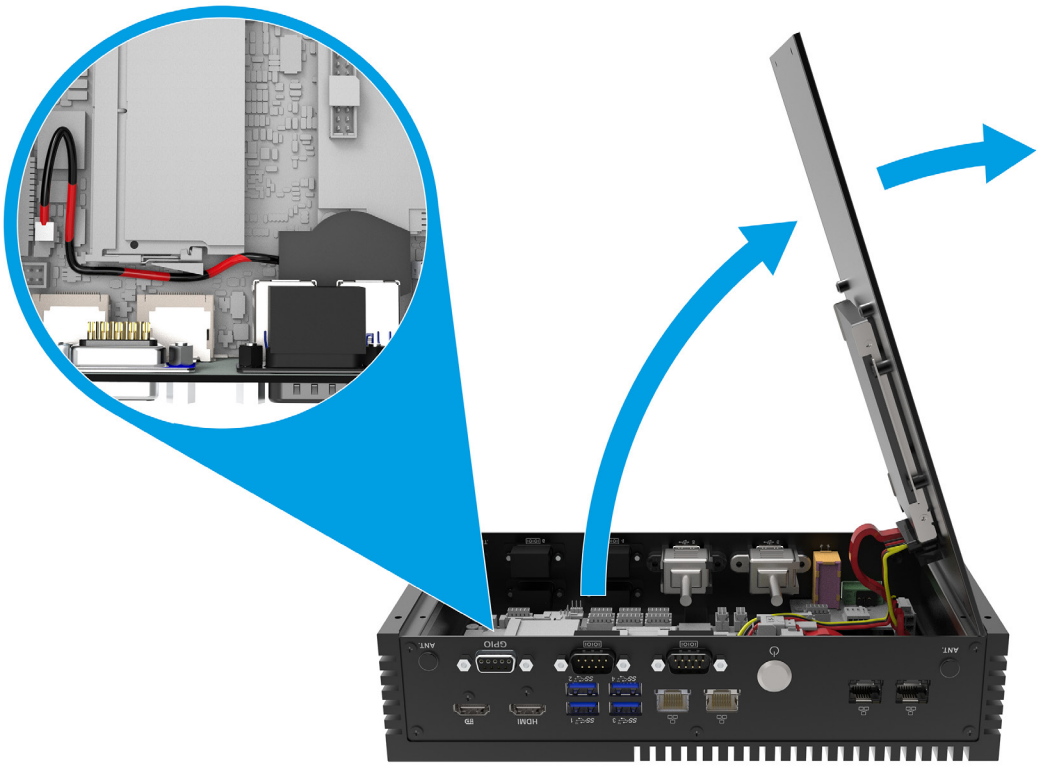

Reverse the steps above to insert a new battery assembly.

Fault-finding

Symptom	Cause	Action
The internal clock of the DPU-2 MK2 is reset each time the unit is powered on.	Dead battery.	Change CMOS battery.
	Unsuitable battery.	Fit suitable CMOS battery.

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Parts list

Type	Part number	Description
DPU-2 MK2 (Siemens)	A-4007-4221	DPU-2 MK2 data processing unit pre-installed with Productivity+™ CNC plug-in (Siemens), with DIN rail mounts, support card and packaging.
DPU-2 MK2 (Fanuc)	A-4007-4222	DPU-2 MK2 data processing unit pre-installed with Productivity+™ CNC plug-in (Fanuc), with DIN rail mounts, support card and packaging.
DPU-2 MK2 (Okuma)	A-4007-4225	DPU-2 MK2 data processing unit pre-installed with Productivity+™ CNC plug-in (Okuma), with DIN rail mounts, support card and packaging.
DPU-2 MK2 (Toolkits)	A-4007-4230	DPU-2 MK2 data processing unit with DIN rail mounts, support card and packaging. For use with Productivity+™ Scanning Toolkits.
Publications. These can be downloaded from our website at **www.renishaw.com**		
DPU-2 MK2	H-4007-8210	Data sheet: DPU-2 MK2

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